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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,944	03/19/2004	Peter Rother	P04,0081	8087

7590 12/01/2005

SCHIFF HARDIN LLP  
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EXAMINER
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KIKNADZE, IRAKLI

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No. X

10/804,944

Applicant(s)

ROTHER ET AL.

Examiner

Irakli Kiknadze

Art Unit

2882

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

### DETAILED ACTION

1. In response to the Office action dated May 25, 2005 the Amendment has been received on August 19, 2005.

Claim 1 has been amended.

Claim 2 has been canceled.

Claims 1 and 3-5 are currently pending in this application.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claimed subject matter, such as composition of a window frame made of a metal compatible with thermal expansion properties of the ceramic material (Al<sub>2</sub>O<sub>3</sub> or SiC) and having a composition of 27-30 wt% Ni, 16-24 wt% Co, other < wt% and a remainder Fe (page 2, lines 4+) is unclear. For one of ordinary skill in the relevant technology, it would be unclear to determine the composition of material having " other < wt% and a

remainder Fe". Further, it is unclear, what is the thermal expansion property of the metal window frame (" preferably made from Vakon, particularly Vakon 10 " as disclosed in the specification page 2, lines 3) that is compatible with two completely different ceramic materials  $\text{Al}_2\text{O}_3$  or  $\text{SiC}$ , having two different thermal expansion properties  $6.8 \times 10^{-6}/^\circ \text{K}$  and  $4.5 \times 10^{-6}/^\circ \text{K}$ , in that order.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Inazuru (US Patent 5,848, 124).

With respect to claim 1, Inazuru teaches an x-ray beam emission window comprising:

a radiation-permeable plate formed by a disc of ceramic material, such as  $\text{SiC}$  (10); and

a window frame (15) directly supporting the plate (10) and attached in a wall opening of an evacuated housing, the window frame being composed of a metal (KOVAR) compatible with thermal expansion properties of the ceramic material ( $\text{SiC}$ ). (Fig.3, column 11, lines 18-40).

The ceramic material SiC (Silicon Carbide) having a coefficient of thermal expansion (CTE)  $4.5 \times 10^{-6}/^{\circ}\text{K}$  and KOVAR (Iron-nickel-cobalt alloy) having a coefficient of thermal expansion  $4.7 \times 10^{-6}/^{\circ}\text{K}$  (from room temperature to  $950^{\circ}\text{C}$ ) are compatible to avoid bending, braking or any type damage associated with thermal stress.

With respect to claim 3, Inazuru teaches that the plate (10) has a metallization thereon and is soldered into the window frame (15) with solder (12) (column 11, lines 26-32).

With respect to claim 4, Inazuru teaches that the plate is soldered into the window frame (15) with active solder (12) (column 11, lines 26-32).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inazuru (US Patent 5,848, 124) as applied to claim 1 above, and further in view of Kutsuzawa (US Patent 6,487,272 B1).

With respect to claim 5, Inazuru teaches that an x-ray beam emission window (10) comprising an auxiliary frame (14) composed of KOVAR and surrounding the

window frame (15) and welded into the wall opening of the evacuated housing (column 11, lines 35-45). Inazuru fails to teach using stainless steel for the auxiliary frame.

Kutsuzawa teaches an X-ray tube comprising an X-ray window holding ring (36) made of mechanically strengthened material such as iron alloys (KOVAR) or (stainless steel) (column 3, lines 41-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ teachings of Kutsuzawa in the invention of Inazury to provide the auxiliary frame composed of stainless steel, since applicant has not disclosed that stainless steel solves any state problem or is for any particular purpose and it appears the invention would perform equally well with the auxiliary frame composed of mechanically strengthened material such as iron alloys KOVAR or stainless steel.

### ***Response to Arguments***

8. Applicant's arguments filed August 19, 2005 have been fully considered but they are not persuasive. With respect to claim 1, Inazuru teaches a radiation-permeable plate formed by a disc of ceramic material, such as Sic (10); and a window frame (15) directly supporting the plate (10) and attached in a wall opening of an evacuated housing, the window frame being composed of a metal (KOVAR) compatible with thermal expansion properties of the ceramic material (SiC). (Fig.3, column 11, lines 18-40). The ceramic material SiC (Silicon Carbide) has a coefficient of thermal expansion (CTE)  $4.5 \times 10^{-6}/^{\circ}\text{K}$  and KOVAR (Iron-nickel-cobalt alloy) has a coefficient of thermal

expansion  $4.7 \times 10^{-6}/^{\circ}\text{K}$  (from room temperature to  $950^{\circ}\text{C}$ ). Further, it is certain that in normally functioning x-ray tube the radiation-permeable plate (x-ray window) and the window frame directly supporting the plate (the arrangement suggested by Inazuru) must have the compatible thermal expansion properties to avoid bending, braking or any type damage associated with thermal stress.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze  
November 23, 2005

IK



EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER